

—22 in the Red River of the North Valley, and freezing weather occurred in the northern portion of the east Gulf states; on the 23d the line of freezing weather was carried to east-central Georgia and northern South Carolina.

From the 24th to the 26th a cold wave moved from the middle and northern plateau regions over the central valleys; on the 24th the temperature fell 30 to 50 in western Montana, and the minimum was —16 to —22 in the western Saskatchewan valley; on the 25th the temperature fell 20 to 40 from northern Utah to southeastern Montana, the minimum temperature was zero at Lander, Wyo., and freezing weather was reported at Tucson, Ariz.; on the morning of the 26th a fall of 20 to 30 in temperature was shown from North Dakota to northern Kansas, the minimum was below zero in the Dakotas, and the line of freezing weather was carried to the Ohio River.

FROST.

The first light frost of the season was reported as follows: 1st, Teviston, Ariz. 2d, Crescent City, Cal. 6th, Olympia, Wash. 10th, Austin, College Station, and El Paso, Tex. 13th, Astoria, Oregon. 15th, Alvarado, Fresno, Niles, and Santa Cruz, Cal. 16th, Palermo and Redding, Cal.; Eustis, Fla.; Portland, Oregon. 25th, Duarte, Los Angeles, and Winchester, Cal.

The first heavy frost of the season was reported as follows: 3d, Albert, N. Mex.; Hartley, Tex. 5th, Bushnell, Ill.; Sedan, Kans.; Covington, La.; Woods Holl, Mass.; Block Island, R. I. 6th, Roseburg, Oregon; Philadelphia, Pa.; Norfolk, Va. 7th, Crescent City, Cal. 9th, Grape Vine, Tex. 10th, Delhi, La.; Aurora, Brazoria, Burnet, Childress, Corsicana, Forestburg, Gainesville, Graham, Menardville, Mesquite, Mountain Spring, New Braunfels, Orange, Paris, Round Rock, and Sulphur Springs, Tex. 11th, Evergreen, Eufaula, and Opelika, Ala.; Forsyth, Piscola, and Statesboro, Ga.; Donaldsonville, La.; Agricultural College, Vicksburg, and Yazoo City, Miss.; Charleston, S. C.; College Station, Tex.

12th, Jacksonville, Fla., tender vegetation killed; Poulan and Savannah, Ga.; Southport, N. C. 13th, Arcata, Cal. 14th, Pleasanton, Cal.; Harrisburg, Pa. 15th, Bakersfield, Cal. 16th, Alvarado and Santa Cruz, Cal. 17th, Eureka and Turlock, Cal.; Hillsboro, N. Mex. 18th, San Jacinto, Cal.; Devine, Hallettsville, and Panter, Tex. 20th, Albany, Oregon; Olympia, Wash., considerable damage in exposed places. 23d, Rogers, Ark.; Palestine, Tex. 24th, Hydesville, Redding, Sacramento, Santa Maria, Wheatland, and Willows, Cal.; Darien, Ga.; Kittyhawk, N. C.; Port Royal, S. C.; Walla Walla, Wash. 25th, Peoria, Ariz.; Agnews, Fresno, and San Bernardino, Cal. 26th, Portland, Oregon; Tatoosh Island, Wash. 27th, Natural Bridge, Ariz.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for November, 1892, as determined from reports of more than 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

In November the monthly precipitation is usually greatest on the northwest coast of Washington, where it exceeds 10.00; it exceeds 8.00 along the immediate Pacific coast north of the 40th parallel; it exceeds 4.00 in the Mississippi Valley south of the 36th parallel, along the Gulf coast from Galveston, Tex., to the Florida Peninsula, in an area extending from the west part of the Carolinas over the eastern half of Tennessee, along the North Carolina coast, and along the immediate Atlantic coast north of New Jersey. West of a line traced from the Red River of the North Valley to central Texas the normal precipitation for November is generally less than 1.00, except along the Pacific coast and in the mountains of Idaho and western Montana.

In November, 1892, the monthly precipitation was greatest along the immediate Pacific coast north of the 40th parallel, where it exceeded 10.00. At stations on the Washington and Oregon coasts it exceeded 15.00, and at points on the immediate north Pacific coast it exceeded 20.00. The monthly amount exceeded 8.00 on the south coast of Nova Scotia, on the south New England coast, and in an area covering central Arkansas. Over the greater part of the country south of the Ohio River and east of Texas and Arkansas the monthly precipitation was 4.00 to 6.00. In an area extending from Minnesota, the Dakotas, and eastern Montana to western Texas, and thence over the middle and southern plateau re-

gions, the monthly precipitation was less than 1.00. It was also less than 1.00 over the Florida Peninsula.

DEPARTURE FROM NORMAL PRECIPITATION.

The monthly precipitation was in excess of the November average along the Pacific coast, over the northern Rocky Mountain and northern plateau regions, and thence to Upper Michigan. It was also in excess in the middle and lower Mississippi valleys, in the middle Atlantic states, and over the Canadian Maritime Provinces. Over the middle and southern plateau and southern Rocky Mountain regions, from western and southern Texas to the extreme upper Mississippi valley, from the middle lake region to the south Atlantic coast, over the greater part of New England, in Florida, and along the middle and west Gulf coasts, the monthly precipitation was deficient. The greatest excess in precipitation was noted on the Washington coast, where it was 6.00 to 8.00, and the excess exceeded 4.00 along the Pacific coast north of the 38th parallel, on the south New England coast, and over southern Nova Scotia. The most marked deficiency in precipitation was noted along the south Atlantic and east Gulf coasts, and at Abilene, Tex., where the precipitation was 2.00 or more less than the average amount for November.

Considered by districts the average percentage of the normal in districts where the precipitation was in excess was about as follows: south Pacific coast, 228; middle Pacific coast, 218; north Pacific coast, 177; northeast slope of the Rocky Mountains, 171; northern plateau, 139; New England, 134; middle Atlantic states, 130; extreme northwest, 116; upper lake region, 108. In districts where the precipitation was deficient the percentage of the normal was about as follows: southeast slope of the Rocky Mountains, 31; middle-eastern slope of the Rocky Mountains, and Key West, Fla., 37; middle plateau, 41; south Atlantic states, Missouri Valley, and southern plateau, 58; east Gulf states, 86. In the west Gulf states, the Ohio Valley and Tennessee, the lower lake region, and the upper Mississippi valley, the monthly precipitation averaged about normal.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for No-

vember for a series of years; (2) the length of record during which the observations have been taken and from which the average has been computed; (3) the total precipitation for November, 1892; (4) the departure of the current month from the average; (5) and the extremes for November during the period of observation and the years of occurrence:

State and station.	(1) Average for the month of Nov.	(2) Length of record.	(3) Total for Nov., 1892.	(4) Departure from average.	(5) Extremes for November.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
Arizona.	Inches.	Years	Inches.	Inches.	Inches.	1890	Inches.	1891
Fort Apache	1.22	16	0.57	- 0.65	2.83	0.00	*	
Fort Mohave	0.64	20	0.00	- 0.64	6.16	0.00	*	
Whipple Barracks	0.82	20	0.00	- 0.82	3.18	1888	0.00	*
Arkansas.								
Keesees Ferry	4.54	11	2.10	- 2.44	8.85	1891	2.10	1892
California.								
Fort Bidwell	2.16	19	3.12	+ 0.96	8.62	1885	T.	1884
Riverside	0.71	12	2.47	1888	0.00	1883, 1891
Colorado.								
Las Animas	0.24	11	0.02	- 0.22	0.70	1885	0.00	1890, 1891
Florida.								
Merritts Island	2.39	14	0.40	- 1.99	5.67	1884	0.17	1886
Georgia.								
Forsyth	3.45	18	3.29	- 0.16	5.41	1888	0.50	1890
Idaho.								
Boise Barracks	1.11	19	0.66	- 0.45	4.43	1874	0.00	1890
Fort Sherman	2.30	9	7.00	+ 4.70	7.00	1892	0.29	1882
Indiana.								
Lafayette	3.14	10	4.22	+ 1.08	6.31	1891	1.44	1884
Indian Territory.								
Fort Supply	1.06	12	0.40	- 0.66	3.30	1874	0.10	1886
Iowa.								
Gresco	1.50	21	0.62	- 0.88	5.20	1879	0.18	1875
Kansas.								
Independence	1.95	20	0.59	- 1.36	3.90	1876	0.06	1872
Salina	0.71	10	0.32	- 0.39	2.55	1889	T.	1887
Louisiana.								
Grand Coteau	3.29	9	4.26	+ 0.97	5.72	1883	1.51	1890
Maine.								
Orono	4.57	22	4.47	- 0.10	8.76	1886	1.78	1882
Maryland.								
Cumberland	2.30	21	3.16	+ 0.86	5.34	1889	0.82	1887
Michigan.								
Kalamazoo	2.58	16	3.08	+ 0.50	5.77	1877	1.25	1882
Missouri.								
Sedalia	2.02	14	1.99	- 0.03	3.17	1881	0.53	1885
Montana.								
Fort Custer	0.51	13	0.64	+ 0.13	1.68	1891	0.05	1887
Nebraska.								
Fort Robinson	0.57	9	0.07	- 0.50	1.70	1885	0.07	1892
Genoa (near)	0.71	16	0.57	- 0.14	1.43	1886	T.	1883
Nevada.								
Brown	0.21	20	0.10	- 0.11	1.39	1885	0.00	*
Carson City	1.35	15	5.85	+ 4.50	7.01	1875	0.00	1884
New Hampshire.								
Hanover	3.71	21	2.53	- 1.18	6.62	1885	0.59	1882
New Mexico.								
Deming	0.71	10	1.80	+ 1.09	1.80	1892	0.00	1886, 1891
Fort Wingate	0.71	19	0.00	- 0.71	2.12	1878	0.00	*
New York.								
Cooperstown	3.07	21	3.19	+ 0.12	4.72	1886	1.45	1876
Plattsburg Barracks	2.36	21	2.74	+ 0.38	4.39	1885	0.54	1882
North Carolina.								
Lenoir	3.39	20	3.30	- 0.09	7.60	1877	0.00	1890
Oklahoma.								
Fort Reno	1.08	9	0.00	- 1.08	3.38	1884	0.00	1886, 1892
Fort Sill	1.49	20	0.35	- 1.14	4.06	1890	0.19	1872
Oregon.								
Bandon	5.51	14	15.23	+ 9.72	18.21	1885	0.33	1890
Pennsylvania.								
Derryberry	3.20	21	3.48	+ 0.28	7.00	1886	1.40	1882
Gramplian	3.02	16	3.21	+ 0.19	6.03	1886	1.42	1872
Wellsboro	4.41	13	2.55	- 1.86	9.07	1889	0.93	1890
South Carolina.								
Statesburg	1.87	11	1.63	- 0.24	3.90	1882	0.87	1886
South Dakota.								
Fort Sully	0.43	21	0.31	- 0.12	1.60	1886	0.00	1883
Texas.								
Austin	3.05	20	1.50	- 1.55	7.53	1874	0.25	1879
Silver Falls	1.25	6	0.45	- 0.80	4.68	1888	0.03	1886
Utah.								
Terrace	0.36	18	0.30	- 0.06	1.83	1874	0.00	*
Vermont.								
Strafford	3.43	19	3.35	- 0.08	6.20	1888	0.50	1874
Virginia.								
Dale Enterprise	2.52	12	3.93	+ 1.41	6.46	1886	0.52	1882
Washington.								
Fort Townsend	2.72	17	4.74	+ 2.02	9.21	1874	0.39	1884
West Virginia.								
Parkersburg	3.28	7	1.12	- 2.16	4.96	1889	1.12	1892
Wisconsin.								
Embarrass	2.75	21	2.90	+ 0.15	5.55	1879	1.35	1887
Madison	2.08	20	1.24	- 0.84	6.02	1879	0.40	1875
Wyoming.								
Fort Washakie	0.47	8	0.83	+ 0.36	1.30	1880	0.06	1890

* Frequently.

PRECIPITATION, JANUARY TO NOVEMBER.
For the period January to November, 1892, inclusive, the

precipitation averaged about normal in the middle Atlantic and east Gulf states, the Ohio Valley and Tennessee, the upper lake region, the extreme northwest, the Missouri Valley, the northeast and middle-eastern slopes of the Rocky Mountains, over the northern plateau region, and in the Pacific coast states. In the lower lake region and upper Mississippi valley the precipitation was one-tenth to two-tenths greater than usual; and in New England, the south Atlantic states, at Key West, Fla., in the west Gulf states, on the southeast slope of the Rocky Mountains, and over the southern and middle plateau regions the precipitation was seven-tenths to nine-tenths of the normal amount for the period named.

YEARS OF GREATEST PRECIPITATION FOR NOVEMBER.

At Block Island, R. I., Deming, N. Mex., Fort Sherman, Idaho, Helena, Mont., and at stations on the immediate Pacific coast from the mouth of the Columbia River northward, the monthly precipitation was the greatest ever reported for November during the respective periods of observation. The greatest precipitation for November was noted over the greater part of Louisiana and Arkansas in 1889; along the middle and south Pacific coasts in 1885; in the interior of the east Gulf and south Atlantic states in 1880; from the lower Missouri valley over the western lake region in 1879; and in Maryland, the District of Columbia, and Virginia in 1877.

YEARS OF LEAST PRECIPITATION FOR NOVEMBER.

At Parkersburg, W. Va., Keesees Ferry, Ark., and Fort Robinson, Nebr., the monthly precipitation was the least ever reported for November during the respective periods of observation. The least precipitation for November was noted generally in the south Atlantic and east Gulf states, and from the Pacific coast over the middle and northern plateau regions in 1890; in the extreme upper Mississippi valley in 1888; over the greater part of New England in 1882; over Illinois, eastern Iowa, and eastern Missouri in 1875; and in the Ohio Valley in 1872.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in November, 1892:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
California	24	Arkansas	2
Washington	7	Tennessee	1
Oregon	6		

Precipitation to equal or exceed 2.50 in 24 hours.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
New Jersey	37	9-10, 15, 15-16, 22-23, 26-30, 27, 27-28, 27-30, 28, 28-30, 29, 29-30, 30, 30-	Oregon	3	15, 16-17, 17, 22,
California	33	28, 27-30, 28, 28-29, 29, 29-30, 29-31, 30, 30-	Mississippi	2	2-3,
		30,	New York	2	15-16,
		30,	Alabama	1	8-9,
		30,	Colorado	1	1-2,
		30,	Louisiana	1	1-6,
		30,	Maine	1	16,
		30,	Michigan	1	17,
		30,	Missouri	1	17,
		30,	North Carolina	1	15,
		30,	Ohio	1	17,
		30,	Rhode Island	1	9-10,
		30,	South Carolina	1	9,

* October 31-November 1.

Precipitation to equal or exceed 1.00 in 1 hour.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Mississippi.....	2	1, 2.	Alabama.....	1	9.
Texas	2	1, 6.	Georgia.....	1	3.

Table of excessive precipitation, November, 1892.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Alabama.</i>						
Gadsden.....	Inches.	Inches.		Inches	h. m.	
Wilsonville.....		3.32	8-9	1.25	1 00	9
<i>Arkansas.</i>						
Black Rock.....		2.52	I			
Brinkley.....		2.82	*			
Camden a.....		5.10	*			
Camden b.....		5.14	*			
Forrest.....		3.10	I			
Fulton.....		4.00	*			
Kirby.....	11.06	4.90	25-26			
Little Rock.....		3.26	*			
Lonoke.....		3.50	*			
New Gascony.....		3.23	*			
Newport a.....		3.20	27?			
Newport b.....		2.89	*			
Pine Bluff.....		4.02	*			
Prescott.....		3.31	*			
Do.....		3.08	26			
Searcy.....	11.74	3.55	*			
Do.....		4.77	26			
Stuttgart.....		3.59	*			
Texarkana.....		2.90	I			
<i>California.</i>						
Arcata.....		2.65	22-23			
Boulder Creek.....	12.79					
Cisco.....	12.60					
Cloverdale.....	13.54	11.86	27-30			
Crescent City.....	11.66					
Delta.....	13.08					
Edmonton.....	23.09	14.50	28-30			
Emigrant Gap.....	15.02					
Fall Brook.....		2.72	29			
Folsom City b.....		2.64	27-28			
Do.....		2.78	29-30			
Georgetown.....	13.31	11.08	28-30			
Grass Valley a.....	13.44	4.80	30			
Grass Valley b.....	12.88	3.52	28			
Do.....		4.43	30			
Iowa Hill.....		2.72	30			
Kennedy Gold Mine.....		3.88	29-30			
Lagrange.....		3.33	30			
Los Angeles (W. B.).....		3.75	28-29			
Los Gatos b.....	13.71	13.16	27-30			
Middletown.....	15.64	14.10	26-30			
Nevada City.....	13.87	3.32	28			
Do.....		5.20	30			
New Almaden.....	10.57					
Newcastle.....		3.49	30			
Nordhoff.....		3.95	27-28			
Oleta.....	10.70	5.95	29-30			
Palermo.....		5.16	29-30			
Pasadena.....		2.62	28			
Placerville a.....	12.14					
Placerville b.....	12.75	9.92	28-30			
Pleasanton b.....		2.65	27			
Rumsey.....	10.57					
Sacramento (W. B.).....		3.26	29-30			
Sacramento a.....		3.24	29-30			
Santa Barbara a.....		2.95	28			
Shasta.....	12.18	5.21	27-28			
Sims.....	13.39					
Sonoma.....		2.67	30			
Susanville.....	10.66	8.91	28-30			
Sutter Creek.....		4.23	30			
Tehama.....	16.58					
Towles.....	12.54					
Upper Mattole.....	13.69	2.79	27-28			
Do.....		4.25	29-30			
Yuba City.....		3.35	30			
<i>Colorado.</i>						
Pikes Peak.....		2.98	1-2			
<i>Connecticut.</i>						
Canton.....		3.45	15-16			
Colchester.....		2.74	15-16			
New Hartford b.....		3.45	15-16			
Norwalk b.....		3.02	15-16			
Stevenson.....		3.19	15-16			
<i>Georgia.</i>						
Dahlonega.....		2.70	8-9			
Lafayette.....		3.53	2-3			
Resaca.....		2.58	8-9			
Rome.....						
<i>Illinois.</i>						
Decatur.....		2.50	I			
Jordans Grove.....		3.52	16-17			
Pana.....		2.50	16-17			

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Table of excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Inches.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.	
			Ant.	Day.	Ant.	Day.
<i>Louisiana.</i>						
Cameron.....		3.66			I	
Do.....		2.71			6	
<i>Maine.</i>						
Cornish.....		2.76			16	
<i>Massachusetts.</i>						
Adams b.....		2.70			15-16	
Hyannis.....		2.75			29-30	
Monroe.....		2.73			15-16	
North Billerica.....		2.56			10	
Royalston.....		3.00			9-10	
Springfield Armory.....		2.58			9-10	
Westboro.....		2.55			9-10	
Woods Holl.....		2.69			9-10	
<i>Michigan.</i>						
Adrian.....		2.79			17	
<i>Mississippi.</i>						
Corinth.....		3.00			2-3	
Holly Springs.....		3.60			2-3	
Logtown.....		2.00			0 30	I
Do.....		2.00			1 00	2
<i>Missouri.</i>						
Edge Hill.....		2.88			17	
<i>New Jersey.</i>						
Asbury Park.....		2.85			15-16	
Atlantic City.....		2.77			15-16	
Bayonne.....		2.57			15-16	
Belleville.....		3.30			15-16	
Belvidere.....		2.57			9-10	
Beverly.....		3.01			15-16	
Boonton.....		2.65			15	
Bridgeton a.....		2.65			15-16	
Caniden.....		2.66			15-16	
Cape May.....		2.72			15-16	
Dover.....		2.87			15-16	
Egg Harbor City.....		3.32			15-16	
Elizabeth.....		3.59			15-16	
Freehold.....		3.73			15-16	
Friesburg.....		3.19			15-16	
Gillette.....		3.18			15	
Hammonton.....		2.95			15-16	
Hanover.....		2.88			15-16	
Highland Park.....		3.15			15-16	
Hightstown.....		4.37			15-16	
Imiaystown.....		3.07			15	
Junction.....		3.02			15-16	
Locktown.....		3.65			15-16	
Moorestown.....		4.10			15-16	
Newark a.....		2.88			15-16	
New Brunswick (W. B.).....		3.15			15-16	
New Brunswick a.....		3.66			15-16	
New Brunswick b.....		3.50			15-16	
Oceanic.....		2.85			15	
Paterson.....		2.89			15-16	
Pensauken.....		3.02			15-16	
Plainfield.....		3.83			15-16	
Rancocas.....		3.25			15	
Tenafly.....		2.52			15-16	
Toms River.....		4.29			15-16	
Whiting.....		3.47			15-16	
Woodbine.....		3.10			15-16	
<i>New York.</i>						
New York.....		3.62			15-16	
Willets Point.....		2.70			15-16	
<i>North Carolina.</i>						
Hatteras.....		2.53			I	
<i>Ohio.</i>						
Montpelier.....		2.63			17	
<i>Oregon.</i>						
Astoria.....		16.78			2-17	
Bandon.....		15.23			22	
Glenora.....		25.56			15	
Do.....		2.83			17	
Do.....		3.44			22	
Langlois.....		14.95				
Toledo.....		13.13				
West Fork.....		12.98				
<i>Rhode Island.</i>						
Block Island.....		3.18			9-10	
<i>South Carolina.</i>						
Kingtree.....		3.10			9	
<i>Tennessee.</i>						
Austin.....		2.50			26	
Covington a.....		2.81			27	
Covington b.....		2.90			27	
Jackson.....		2.85			27	
Johnsonville.....		10.15				
Riddleton.....						
Rugby.....		3.42			27	
Waynesboro.....		2.50			27-28	
<i>Texas.</i>						
Corpus Christi.....		4.61			5-6	
Galveston.....						
Houston.....		3.09			2-3	
Huntsville.....		4.00			3	
McGregor.....		2.75			2	
Nacogdoches.....		3.19			2-3	
New Ulm.....		3.79			2-2	
Orange.....						
Palestine.....		4.07			I-2	

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.	
		Amt.	Day.	Amt.	Time.
Washington.	Inches.	Inches.		Inches.	h. m.
Aberdeen.	20.46	3.27	17		
East Clallam.	19.07	5.41	17-18		
Fort Canby.	15.71				
Madrone.		3.75	17-18		
Neah Bay.	20.62				
Olympia.	12.74	3.20	17-18		
Port Crescent.	11.41	2.53	17-18		
Tacoma.		2.60	18		
Tatoosh Island.	16.50				

Received too late for publication in October, 1892.

Louisiana.					
Alexandria.		3.15	14-15		
Texas.					
Corsicana α .		4.50	14		
Eastland.		2.50	21		
Sulphur Springs.		2.60	13		

*October 31-November 1.

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during November, 1892, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Maximum rainfall in one hour or less.

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		Inch.		Inch.	
Atlanta, Ga.	0.18	7	0.26	7	0.47	14
Bismarck, N. Dak \dagger						
Boston, Mass.	0.06	10, 16	0.10	16	0.31	10, 16
Buffalo, N. Y.	0.10	18	0.10	7, 18	0.25	2
Cincinnati, Ohio.	0.03	17, 27	0.05	17, 27	0.15	17, 27
Chicago, Ill.	0.05	17	0.09	17	0.40	17
Cleveland, Ohio.	0.02	27	0.03	27	0.19	27
Denver, Colo \ddagger .						
Detroit, Mich.	0.03	2	0.05	2	0.29	2
Dodge City, Kans \ddagger .						
Duluth, Minn \ddagger .						
Eastport, Me.	0.04	19	0.06	19	0.20	19
Gainesville, Tex.	0.25	6	0.32	6	1.00	6
Indianapolis, Ind.	0.07	1	0.13	1	0.45	1
Jacksonville, Fla.	0.05	29	0.10	29	0.29	29
Jupiter, Fla.	0.03	9	0.05	9	0.13	9
Kansas City, Mo.	0.03	16	0.06	16	0.15	16
Key West, Fla.	0.23	* 18	0.30	18	0.43	18
Marquette, Mich \ddagger .						
Memphis, Tenn.	0.07	27	0.13	27	0.54	27
Milwaukee, Wisc.						
New Orleans, La.	0.17	6	0.26	6	0.60	1
New York, N. Y.	0.07	15	0.12	15	0.40	15
Norfolk, Va.	0.04	15	0.06	15	0.23	15
Omaha, Nebr.						
Philadelphia, Pa.	0.05	10, 15	0.08	10, 15	0.39	15
Philadelphia Water Works.	0.08	18	0.17	18	0.46	15
Pittsburg, Pa.*						
Portland, Oregon.	0.06	19	0.07	19	0.17	15
Saint Louis, Mo.	0.15	17	0.25	17	0.67	17
Saint Paul, Minn \ddagger .						
Salt Lake City, Utah \ddagger .						
San Diego, Cal.*						
San Francisco, Cal.	0.12	30	0.17	30	0.23	30
Savannah, Ga.	0.12	14	0.16	14	0.46	14
Tampa, Fla.	0.10	5	0.15	5	0.35	3
Washington, D. C.	0.10	18	0.15	18	0.27	18
Wilmington, N. C.	0.03	15	0.06	15	0.18	15

* Self-register out of order.

 \ddagger No record on account of snow.

† Less than 0.05 in 1 hour.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several states and territories for November during the last 23 years:

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Washington	13	Wisconsin	I
Oregon	10	Illinois	I
California	6	Kentucky	0
Maryland	4	Arizona	0
Texas	4	District of Columbia	0
Mississippi	4	Idaho	0
North Carolina	4	Indiana Territory	0
Louisiana	3	Iowa	0
Arkansas	3	Maine	0
Massachusetts	3	Minnesota	0
New York	3	Missouri	0
Florida	2	Montana	0
Indiana	2	Nebraska	0
New Hampshire	2	Nevada	0
New Jersey	2	New Mexico	0
Tennessee	2	Ohio	0
Alabama	1	Rhode Island	0
Colorado	1	The Dakotas	0
Connecticut	1	South Carolina	0
Delaware	1	Utah	0
Georgia	1	Vermont	0
Kansas	1	Virginia	0
Michigan	1	West Virginia	0
Pennsylvania	1	Wyoming	0

Excessive daily precipitation (24 hours).

Louisiana	18	California	6
Texas	18	Michigan	6
North Carolina	17	Ohio	6
Massachusetts	13	Kentucky	5
Alabama	13	Rhode Island	4
Tennessee	13	Maryland	3
Georgia	12	Virginia	3
Mississippi	11	Wisconsin	3
Florida	10	West Virginia	3
New York	10	Colorado	2
Illinois	10	Delaware	2
Indiana	9	Indian Territory	2
Connecticut	8	Vermont	2
Arkansas	8	Arizona	1
Missouri	8	The Dakotas	1
Oregon	8	District of Columbia	1
Maine	7	Minnesota	1
New Jersey	7	Nebraska	0
Pennsylvania	7	New Mexico	0
South Carolina	7	Idaho	0
Washington	7	Montana	0
Iowa	6	Nevada	0
Kansas	6	Utah	0
New Hampshire	6	Wyoming	0

Excessive hourly precipitation.

Texas	8	Idaho	0
Mississippi	4	Illinois	0
Florida	3	Indiana Territory	0
North Carolina	3	Iowa	0
Tennessee	3	Louisiana	0
California	2	Maine	0
Indiana	2	Massachusetts	0
Alabama	2	Minnesota	0
Georgia	1	Missouri	0
District of Columbia	1	Montana	0
Kansas	1	Nevada	0
Kentucky	1	New Hampshire	0
Michigan	1	New Jersey	0
Nebraska	1	New Mexico	0
New York	1	Ohio	0
Pennsylvania	1	Oregon	0
South Carolina	1	Rhode Island	0
Virginia	1	The Dakotas	0
West Virginia	1	Utah	0
Arizona	0	Vermont	0
Arkansas	0	Washington	0
Colorado	0	Wisconsin	0
Connecticut	0	Wyoming	0
Delaware	0	Maryland	0

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for November during the last 23 years:

Monthly.

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
Crescent City, Cal	Inches. 31.93	1885	Neah Bay, Wash	Inches. 23.06	1891
Delta, Cal	29.38	1885	Fort Stevens, Oregon	22.21	1877
Glenora, Oregon	25.56	1892	Point Pleasant, La	20.89	1877
Fort Gaston, Cal	24.54	1885	Neah Bay, Wash	20.62	1892
Georgetown, Cal	24.12	1875	Aberdeen, Wash	20.46	1892
Edmonton, Cal	23.09	1892			

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
Edmonton, Cal	14.50	28-30, 1892	Cheneyville, La	5.70	9, 1891
Middletown, Cal	14.10	26-30, 1892	Galveston, Tex	5.63	6, 1892
Los Gatos, Cal b	13.16	27-30, 1892	Fayette, Miss	5.60	27-28, 1880
Cloverdale, Cal	11.86	27-30, 1892	Wellsboro, Pa	5.50	23, 1884
Georgetown, Cal	11.08	28-30, 1892	Boston, Mass	5.43	20-21, 1876
Fort Barrancas, Fla ..	10.39	26, 1878	East Clallam, Wash ..	5.41	17-19, 1892
San Luis Obispo, Cal ..	10.04	17-18, 1885	Barnegat City, N. J ..	5.33	24-25, 1877
Placerville, Cal. b	9.92	28-30, 1892	Linville, N. C	5.25	9-10, 1891
Susanville, Cal	8.91	28-30, 1892	Ft. Independence, Mass ..	5.25	21-22, 1872
Bluff Settlement, Tex ..	8.00	14-16, 1874	Newport, Mich	5.25	24-25, 1884
Chenyeville, La	7.91	15-16, 1890	Shasta, Cal	5.21	27-28, 1892
Dover, Del	7.58	18-20, 1876	Charleston, Ill	5.21	26-27, 1887
Point Pleasant, La	7.10	2, 1877	Nevada City, Cal	5.20	30, 1892
Marion, Ala	7.00	6-7, 1885	Okaloosa, La	5.20	9, 1879
Melissa, Tex	7.00	1, 1877	Palermo, Cal	5.16	29-30, 1892
Belmont Farm, Tex ..	7.00	1, 1877	Mattoon, Ill	5.11	26, 1887
Point Pleasant, La	6.80	8, 1877	Camden, Ala. b	5.14	31-1, 1892*
Quitman, Ga	6.70	5-6, 1880	Camden, Ala. a	5.10	31-1, 1892*
Milton, Mass	6.20	25-27, 1888	Dyersburg, Tenn	5.10	16, 1891
Booneville, Miss	6.12	21-22, 1891	Palestine, Tex	5.05	10, 1883
Fort Barrancas, Fla ..	6.07	16, 1881	White Plains, N. Y ..	5.00	27-28, 1890
Point Pleasant, La	6.03	11-12, 1881	Lake Charles, La	5.00	16, 1890
Greensboro, Ala	6.00	6-7, 1885	Sandy Springs, Md	5.00	23-24, 1877
Oleta, Cal	5.95	29-30, 1892	Vandalia, Ill	5.00	26, 1887
Red Bluff, Cal	5.93	8-9, 1885	Ellsworth, N. C	5.00	28, 1886
Charleston, S. C ..	5.84	16-17, 1889	Reidsville, N. C	5.00	7-8, 1891
Thatchers Island, Mass ..	5.75	18-19, 1878			

October 31-November 1.

One hour and less.

Station and state.	Amount.	Time.	Date.
New York, N. Y	Inches.	h. m.	
Galveston, Tex	0.25	0 02	18, 1886
Memphis, Tenn	0.25	0 05	6, 1892
Washington, D. C.	0.40	0 05	16, 1890
Jupiter, Fla	0.35	0 05	23, 1891
Galveston, Tex	0.30	0 05	29, 1890
Vicksburg, Miss	1.48	0 15	5, 1877
Logtown, Miss	1.82	0 20	15, 1879
Hallettsville, Tex	2.10	0 30	1, 1892
	1.60	0 30	8, 1891

SNOW (in inches and tenths).

Chart V shows the depth of snowfall reported for the month. The greatest depth of snowfall reported was 70 at Emigrant Gap, Cal.; a depth of 56 was noted at Pikes Peak, Colo., and at Virginia City, Nev., 48 fell. In northern Upper Michigan, and at Blue Knob, Pa., the monthly snowfall was about 30; in the mountains of Colorado, at Virginia City, Mont., Cran-
don, Wis., and Alfred Center, N. Y., more than 20 were noted; and generally in Maine, the interior of New York, the mountains of Pennsylvania, northeastern Ohio, northwestern Lower Michigan, in the interior and northern parts of Wisconsin, northern Minnesota, and northeastern North Dakota, the monthly snowfall exceeded 10.

DEPTH OF SNOW ON GROUND ON THE 15TH AND AT THE CLOSE OF THE MONTH.

Chart VI shows the depth of snow reported on the ground at the close of the month. On the 15th 2 to 3 of snow were reported in western New York, western Pennsylvania, eastern Ohio, northwestern and northern Lower Michigan, northern Wisconsin, and over parts of Minnesota and the eastern Dakotas. In the mountains of Colorado a depth of 15 to 17 was noted. Snow was also reported on the ground on the 15th at points throughout the middle and northern plateau regions.

At the close of the month 10 to 40 were reported in the mountains of Colorado and west-central Nevada; and snow was reported on the ground north of a line traced from central New Jersey westward to southern Iowa, and thence to the northern Rocky Mountain region, the greatest depth being noted in southern New England, southeastern New York, eastern Pennsylvania, and Upper Michigan, where it exceeded 10.

Snowfall of 5 inches, or more, was reported as follows, and in states and territories where the maximum depth was below that amount the station reporting the greatest is given:

Arizona.—Chiricahua Mountains, 5.5. *Arkansas.*—Dallas, 9; Conway, 6.5; Bee Branch, 6; Black Rock, Kirby, and Newport (b), 5. *California.*—Emigrant Gap, 70; Cisco, 54; Sisson, 47; Truckee, 27; Dunsmuir, 26; Susansville, 18; Boca, 16; Fort Bidwell, 15.5; Towles, 10; Sims, 9; Nevada City, 6. *Colorado.*—Pikes Peak, 55.8; Red Cliff, 22; Dillon, 19; Downing, 13.5; Alma, 12.5; Pagoda (near) and Stamford, 12; Scissors, 11; Georgetown, 9.8; Villa Grove, 9.5; Como (near), 9.2; Glen Eyrie and Husted, 9; Dumont, 8.5; Moraine, 7.5; Gold Hill, 7.4; Table Rock, 6; Pueblo, 5.7; Del Norte, 5.5; Saint Cloud and Steamboat Spring, 5.

Connecticut.—Norwalk (b), 14; Middletown, 11; New Haven, 10.5; Stevenson, 10; Colchester, 9; New Hartford (a), 8.5; Canton and Southington, 8; Voluntown, 7.8; Lebanon, New London, North Grosvenor Dale, and West Simsbury, 6; Hartford (b) and Franklin, 5. *District of Columbia.*—Washington, 3.5. *Idaho.*—Henry Lake, 15; Kootenai, 13; Moscow, 12; Garden Valley, 9.5; Ruthsburg, 9. *Illinois.*—Winnebago, 9; Cairo, 6.1; Shawneetown, 5. *Indiana.*—Connersville, 10; Degonia Springs, 7; Butlerville and Farmland, 5.5; Columbus, Franklin, and Kokomo, 5. *Indian Territory.*—Fort Supply, 2.

Iowa.—Washington, 14; Hopkinton, 10; Iowa City, 9; Davenport, 7.6; Richland, 7.5; Monticello, 6.8; Dubuque, 6.5; Bonaparte and Mechanicsville, 6; Cedar Rapids, 5.7; Delaware, 5.6; Fairfield, 5.2; Keosauqua and Maquoketa, 5. *Kansas.*—Gove City, 5. *Kentucky.*—Wickliffe, 7. *Maine.*—Farmington and Mayfield, 16; Orono, 15.5; Cornish, 13; Houlton and Kents Hill, 12; Belfast, Calais, and Lewiston, 10; Portland, 9.6; Gardiner, 9.5; Kennebec Arsenal, 8; Fairfield, 7; Bar Harbor, 6. *Maryland.*—Cumberland (a), 8.

Massachusetts.—Groton (a), 13; Kendall Green, 11; North Billerica and Wakefield, 9; New Bedford (a), 8.5; Fall River (a), Fitchburg (a), Lawrence, Leominster, Monroe, Newburyport (a), Salem (b), Somerset, and Taunton (d), 8; Roberts Dam and Westboro, 7; Amherst, Blue Hill (summit), Fitchburg (b), Gilbertville, Lake Cochituate, Middleboro, Milton, Monson, Taunton (b), and Wellesley, 6; Concord (a), 5.8; Framingham, Hyannis, Ludlow (a), Mount Nonotuck, Roxbury, South Hingham, Springfield Armory, and Worcester (b), 5.

Michigan.—Boon, 30.1; Ivan, 25; Calumet and Lathrop, 23; Marquette, 22.3; Crystal Falls, 20.7; Rockland, 19; Harbor Springs, 18; Gaylord, 17.7; Cheboygan, 9.6; Bellaire and Port Huron, 9.2; Ann Arbor, 8.2; Harrisville, 8.1; Ball Mountain, 7.9; Escanaba, 7.8; Sault Ste. Marie, 7.7; Rawsonville, 7.2; Saint Ignace, 7; Detroit, 6.4; Ypsilanti, 6.2; Fitchburg, Hart, McMillan, Manistee, and Weldon Creek, 6; Adrian and Clinton, 5.8; Birmingham and Thornville, 5.5; Alpena, 5.4; Vandalia, 5.2; Hanover and Highland Station, 5.

Minnesota.—Pine River, 14; Leech Lake, 13.5; Lake Winnibigoshish, 13.2; Duluth, 13; Ortonville, 11; Saint Olaf, 9; Alexandria and Fort Ripley, 7; Fergus Falls, 6.4; Morris, 6; Moorhead, 5.5; Maple Plain, 5.1. *Mississippi.*—Holly Springs, trace. *Missouri.*—Sedalia, 8; Gordonville, 5.5; Liberty, 5. *Montana.*—Virginia City, 20; Cokedale, 18; Elk Park, 17.4; Helena, 16.1; Hogan, 12; Great Falls, 11.1; Camp Poplar River, 10; Deer Lodge, 9.5; Havre, 9.2; Fort Logan, 9; Bozeman, 8; Fort Keogh, 7; Miles City, 6.3; Fort Custer, 5.7. *Nebraska.*—Springview, 4.

Nevada.—Virginia City, 48; Lewers Ranch, 23; Palmetto, 16; Carson City, 15.5; Candelaria, 8; Stofiel, 6.8; Elko (near), Reno, and Reno State University, 6; Cranes Ranch and Ely, 5. *New Hampshire.*—Berlin Mills, 14.5; West Milan, 12; Lancaster, 11; Manchester, 10.3; Brookline and Littleton, 10; Nashua, 9.5; Concord (a) and Stratford, 9; East Canterbury, 7.5; Peterboro, 7; Antrim, 6.5; Dublin, 6; Grafton

and Sanbornton, 5. *New Jersey*.—South Orange, 7. *New Mexico*.—Springer, 8.

New York.—Alfred Center, 27; Le Roy, 26.8; Humphrey, 25; South Canisteo, 24.3; New Lisbon, 20.2; Wedgwood, 17.5; Perry City, 17.4; Turin, 17.2; Malone, 17; Brookfield, 16.3; Brentwood, 16; Number Four, 15.9; Oswego, 15.7; Eden Center and Ithaca, 15.5; Rochester, 14; Canton, 13.8; Arcade, 13.7; Middletown, 13.5; Angelica, Baldwinsville, and Geneva, 13; New York, 12.3; Lockport, Lyons, and Palermo, 12; Lowville, 11.4; Fleming, North Hammond, and Potsdam, 11; Romulus, 10.8; Buffalo, 10.5; Utica, 10.2; Port Jervis and Setauket, 9; Hess Road Station, 8.4; Oxford, 8.1; Factoryville, 7.7; Addison and Binghamton, 7; Jamestown, 6; Plattsburg Barracks, 5.3; Cooperstown, 5. *North Carolina*.—Currituck Inlet, 1.5.

North Dakota.—Saint Johns, 18; Napoleon, 14.6; Churchs Ferry, 12.2; Grafton, 12; Grand Forks, 11.5; Fort Buford, 10.5; Wild Rice, 10; Milton, 9; Wahpeton, 8; Forman, 7.5; Ellendale, 7.2; Bismarck, 6.3; Carrington, 6; Grand Rapids, 5.4. *Ohio*.—Bissells, 14.8; Garrettsville, 12; Ellsworth, 10.4; Hiram, 10.2; Oberlin and Orangeville, 10; Bloomingburg, 9.9; Strongsville and Wheeler, 9; Waynesville and West Milton, 8.8; North Royalton, 8.6; Campbelltown, 8.5; Auburn, 8.1; Greenville, Lordstown, and North Lewisburg, 8; New Alexandria, 7.9; Plattsburg, 7.6; Wauseon, 6.7; Bellevue and Fostoria, 6.5; Columbus, 6.3; Dayton, 6.2; Canton, Hanging Rock, Jacksonboro, and Rittman, 6; Pomeroy and Toledo, 5.8; Harbor, 5.5; Bethany, Cleveland, Mansfield, Sharon Center, and Sidney, 5.

Oklahoma Territory.—Gate City, 2. *Oregon*.—West Fork, 35; Siskiyou, 25; Sparta, 16.5. *Pennsylvania*.—Blue Knob, 31; Stoyestown, 28; Somerset, 22.7; Drifton, 19; Salem Corners, 16.8; Saegerstown, 16.1; Dyberry, Honesdale, and Kilmer, 16; LeRoy, 15.5; Girardville, 14.8; Meadville, 14.7; Clarion, 14; Blooming Grove and Grampian, 13; McConnellsburg, 12.5; Coopersburg, 12.1; State College, 11.7; Carlisle, 11.5; Aqueduct, 10.8; Lebanon, 10.7; Quakertown, 10; Emporium, 9.9; Hamburg, 9; Huntingdon and York, 8.5; Wellsboro, 8.1; Corry, Johnstown, and Warren, 8; Harrisburg, 7.8; Erie, Hollidaysburg, and Wilkesbarre, 7; Du Bois, 6.8; Kennett Square and Selins Grove, 6.5; East Mauch Chunk, 6.2; Lock Haven and Ridgway, 5.5; Uniontown, 5.2; Lancaster, 5.

Rhode Island.—Lonsdale, 8; Kingston (a) and Providence (a), 6. *South Dakota*.—Webster, 10.8; Carthage and Mellette, 9; Travare, 8.6; Wessington Springs, 8; Castlewood, 7; Wolsey, 6.5; Frankfort and Kimball, 6; Huron, 5.4; Ashcroft, Bowdle, and Millbank, 5. *Tennessee*.—Greeneville, 0.5. *Texas*.—Arthur City, 1. *Utah*.—Salt Lake City, 10; Ogden (b) and Provo City, 6; Ogden (a), 5.5; Logan and Thistle, 5. *Vermont*.—Norwich, 15; Chelsea, 12; Enosburg Falls, 11.2; South Royalton and Strafford, 11; Woodstock, 8; Burlington, 7; Hartland, 6.6; Saxtons River, 6. *Virginia*.—Stephens City, 7.5. *Washington*.—Spokane, 2.

West Virginia.—Piedmont, 8; Tannery, 7.2; Central Station, 6; Buckhannon (a) and Grafton, 5. *Wisconsin*.—Crandon, 21.3; Rhinelander, 20.3; Koepenick, 14; Bayfield, 13; Embarrass, 12.8; Mineral Point, 12; Amherst, 11.5; Grantsburg, 11; Florence, 10.7; Appleton, 10.5; Oconto, 10.2; Juneau and Medford (a), 10; Medford (b), 9.5; Green Bay, Shawano, and Westfield, 9.1; Hillsboro, 9; Portage, 8; Meadow Valley, 7.5; Barron and Oshkosh, 7; Viroqua, 6.5; Baraboo, Beaver Dam, and Hudson, 6; Harvey, Shell Lake, and Valley Junction, 5.5; Sparta (b), 5.2; Cadiz, 5. *Wyoming*.—Fort Yellowstone, 14.2; Big Horn Ranch, 10.5; Fort Washakie, 8.3; Lander, 7.9; Camp Pilot Butte, 6.5.

The first snow of the season was reported as follows: 1st, Gaynor, Colo.; Larabee, Iowa; Allison and Englewood, Kans.; Minneapolis and Saint Paul, Minn.; Gallatin, Mo.; Gering and Marquette, Nebr.; East Las Vegas, Folsom, and

Springer, N. Mex.; Mitchell, Parkston, and Webster, S. Dak.; Embarrass, Koepenick, and Osceola Mills, Wis. 2d, Fort Apache, Ariz.; Alta and Hampton, Iowa; Eureka Ranch, Kans.; Cornish, Gardiner, Orono, and Portland, Me.; Royalston, Mass.; Kearney, Nebr.; East Canterbury, Groveton, and Manchester, N. H.; Sante Fe, N. Mex.; Saint Johns, N. Dak.; Yankton, S. Dak.; Hartland and Woodstock, Vt.

3d, Chiricahua Mountains, Ariz.; Havana, Ill.; North Billerica, Mass.; Hills Ranch, N. Mex.; Canton, N. Y.; Parker, S. Dak. 4th, Rockford, Sycamore, and Walnut, Ill.; Detroit, Grand Haven, Kalamazoo, Thornville, and Ypsilanti, Mich.; Bement, Garrettsville, Orangeville, Tiffin, Toledo, Wauseon, and Wheeler, Ohio; Appleton, Delavan, Green Bay, Juneau, Manitowoc, Oshkosh, Raymond, Rhinelander, and Viroqua, Wis.

5th, New Haven, Conn.; Amherst, Blue Hill, Boston, Cambridge, Chestnut Hill, Concord, Fall River, Leicester, Milton, Nantucket, New Bedford, Provincetown, Somerset, Vineyard Haven, Westboro, and Woods Holl, Mass.; Concord, N. H.; Albany, Geneva, Lowville, and Palermo, N. Y.; Gratiot and Wooster, Ohio; Corry, Easton, Grampian, Lock No. 4, New Castle, Ridgway, State College, Warren, and Wilkesbarre, Pa.; Narragansett Pier, R. I.; Enosburg Falls, Vt.; Bluefield, Buckhannon, Ella, Elkhorn, and Piedmont, W. Va.

6th, Grand Meadow, Keosauqua, Vinton, and Webster City, Iowa; Canton, Ky.; Eastport, Me.; Moorhead, Minn.; Ashley, Churchs Ferry, Ellendale, Forman, Gallatin, Grand Forks, Grand Rapids, Napoleon, Wahpeton, and Wild Rice, N. Dak.; Alexandria, Bowdle, Carthage, Cross, Faulkton, Frankfort, Huron, Onida, Rapid City, Travare, and Wessington Springs, S. Dak.

7th, Chicago and Ottawa, Ill.; Algona, Amana, Ames, Atlantic, Belle Plaine, Cedar Rapids, Centerville, Charles City, Clarinda, Corning, Cresco, Davenport, Des Moines, Eagle Grove, Fairfield, Fayette, Greenfield, Hopeville, Independence, Iowa Falls, Keokuk, Maquoketa, Mason City, Murray, Osage, Panama, Storm Lake, Tipton, and Williams, Iowa; Alma City, Montevideo, Morris, Red Wing, and Saint Charles, Minn.; Pickering, Mo.; Omaha and Plattsmouth, Nebr.; Fargo, N. Dak.; Brookings, Flandreau, Forestburg, Sioux Falls, Tyn dall, and Wentworth, S. Dak.; Spokane, Wash.; Barron, Eau Claire, Grantsburg, Harvey, La Crosse, Sharon, Sparta, Valley Junction, and Weston, Wis.

8th, South McAlester, Ind. T.; Colby, Gove City, Greensburg, Lakin, Morland, Shields, and Tribune, Kans.; Franklin and Shelbyville, Ky.; Calloway, Culbertson, Hayes Center, and Ough, Nebr.; Oklahoma City, Okla.; Bolivar and Covington, Tenn.; Amarillo and Coldwater, Tex.; Black River Falls and Meadow Valley, Wis.

9th, Bee Branch, Black Rock, Brinkley, Conway, Dallas, Fayetteville, Forrest, Harrison, Hope, Keesees Ferry, Kirby, Little Rock, Lonoke, Madding, Malvern, Mount Nebo, Newport, New Gascony, Ozark, Rogersville, Russellville, Searcy, Stuttgart, Washington, and Winslow, Ark.; New Hartford and Southington, Conn.; Cairo, Effingham, Golconda, Jordans Grove, Martinsville, McLeansboro, Mount Carmel, Olney, Palestine, Shawneetown, and Saint Johns, Ill.; Indianapolis, Jeffersonville, Logansport, Marion, Mauzy, Rushville, Terre Haute, and Vevay, Ind.; Kiowa, Oberlin, Rome, Sterling, and Wallace, Kans.; Caddo, Earlington, Eddyville, Lexington, Louisville, Paducah, Pellville, Princeton, Robards, Russellville, and Wickliffe, Ky.; Woodstock, Md.; Monson, Mass.; Rawsonville, Mich.; Holly Springs, Miss.; Carrollton, Edge Hill, Gainesville, Gayoso, Gordonville, Ironton, Mansfield, Marble Hill, Mine La Motte, Oak Ridge, Olden, Oto, Phillipsburg, Poplar Bluff, Rolla, and Springfield, Mo.; Hartington and Lexington, Nebr.; Beverly, Moorestown, Newark, New Brunswick, Penns Grove, Readington, Toms River, and South Orange, N. J.; New York and

Rondout, N. Y.; Bellevue, Cincinnati, Demos, Mansfield, Milfordton, North Lewisburg, Pomeroy, Portsmouth, Sandusky, Sidney, Westerville, and West Milton, Ohio; Gate City, Okla.; Aqueduct, Blooming Grove, Confluence, East Mauch Chunk, Greensboro, Huntingdon, Lock Haven, Phoenixville, Quakertown, Wellsville, West Chester, and West Newton, Pa.; Franklin, Milan, and Nashville, Tenn.; Arthur City and Red River City, Tex.; Dale Enterprise, Riverton, Stanardsville, Staunton, and Stephens City, Va.; Fairmont, Glenville, Grafton, Martinsburg, Morgantown, Parkersburg, Romney, Tannery, and Wheeling, W. Va.

10th, Huntingdon and Vincennes, Ind.; Hutchinson, Kans.; Burkesville, Edmonton, Greensburg, Harrodsburg, and Matlock, Ky.; Frederick, Md.; Cape Girardeau and Steelville, Mo.; Norfolk, Nebr.; Bakersville, N. C.; Caledonia, Canton, and Kenton, Ohio; Brookville, Johnstown, Parkers, Saltsburg, and Stoyestown, Pa.; Chattanooga and Springdale, Tenn.; Harpers Ferry and Spencer, W. Va. 11th, Richmond, Va.; Waukesha, Wis. 12th, Payette, Idaho. 14th, Horse Cove, N. C. 15th, Greeneville, Tenn.; Grouse Creek, Utah. 16th, Prescott, Ark.; Sheridan Lake and Walnut, Colo.; Concordia, Manhattan, Salina, and Wichita, Kans.; Canton and Princeton, Mo.; Kimball, Nebr.

17th, Aurora, Bushnell, Carlinville, Galva, Griggsville, Quincy, and Springfield, Ill.; Lafayette, Ind.; Bonaparte, Delaware, Fort Madison, Iowa City, Mechanicsville, Monticello, Richland, and Washington, Iowa; Abilene, Atchison, Eldorado, Havensville, Independence, Leavenworth, Lebo, Marion, Minneapolis, Morse, Topeka, Wakefield, and Yates Center, Kans.; Appleton City, Arthur, Brunswick, Chillicothe, Clinton, Columbia, Conception, Dadeville, Darksville, East Lynne, Eldon, Farmersville, Fayette, Fox Creek, Glasgow, Glensted, Gorin, Grovedale, Harrisonville, Hastain, Hermann, Kansas City, Kidder, Lamonte, Lebanon, Lexington, Liberty, McCune, Mount Vernon, New Hartford, Oakfield, Oregon, Paris, Platte River, Saint Charles, Saint Joseph, Sedalia, Shelbina, Stellada, Van Cleve, Vermont, Warrenton, Wellsville, West Plains, Wheatland, and Whiteside, Mo.; Crete and Lincoln, Nebr.; Deseret, Utah; Baraboo, Cadiz, Fond du Lac, Neillsville, and Westfield, Wis.

18th, Carthage, Mo.; Wytheville, Va.; Portage, Wis. 19th, Fairmount, Ill.; Mount Sterling, Richmond, Shelby City, and South Forks, Ky.; Barren Creek Springs, Md.; Hart, Mich.; New Boston, Mo.; Bailey and Weldon, N. C.; Blacksburg, Big Stone Gap, Christiansburg, Lexington, and on mountains near Lynchburg, Va.; Nuttallburg, W. Va. 22d, Susanville, Cal.; Cooperstown, N. Y. 23d, Nevada City, Oleta, and Tehachapi, Cal.; Leonardtown and Solomons, Md.; Atlantic City and Egg Harbor City, N. J.; Mahoning, Pa.; Aberdeen, S. Dak.; Birdsnest, Norfolk, Saluda, Spottsville, Warsaw, and Weston, Va.

24th, Yreka, Cal.; Houston, Mo.; Haigler and Santee Agency, Nebr.; Freeport, Pa.; Block Island, R. I.; Oelrichs, S. Dak.; Cisco, Lake Park, Moab, Ogden, Parowan, Richfield,

and Snowville, Utah; Walla Walla, Wash. 25th, Georgetown and Grass Valley, Cal.; Lagrange and Oswego, Ill.; Blakesville and Hawkeye, Iowa; Burwell, Dunning, Ericson, and Springview, Nebr.; Gary, Kimball, Mellette, and Rosebud, S. Dak.; Charlottesville and Salem, Va.; Clallam Bay, Port Angeles, and Pysht, Wash.; Danville, W. Va.; Oconomowoc, Wis. 26th, Oregon, Ill.; Oskaloosa, Iowa; Irena, Mo.; Avon, Hot Springs, Lynchburg, and Mossing Ford, Va.; Olympia, Wash. 27th, New London, Conn.; Clinton, Iowa; Bedford City, Va. 28th, Dudley, Mass.; Falls Church and Marion, Va. 29th, Voluntown, Conn.; Fort Canby, Wash. 30th, River Vale, N. J.

HAIL.

Description of the more severe hailstorms of the month is given under "Local storms." Hail was reported as follows: 1st, Arizona, Arkansas, and Illinois. 2d, New York. 4th, Ohio. 5th, Missouri and Montana. 6th, Texas. 8th, Texas. 9th, Delaware, Illinois, Maryland, and New Jersey. 10th, Maryland and Texas. 11th, New Mexico. 13th and 14th, Washington. 15th, North Carolina and Washington. 16th, Arkansas and Missouri. 17th, Arkansas, Illinois, and Missouri. 18th, North Carolina. 19th, New Jersey. 20th, North Carolina. 21st, Connecticut and New Jersey. 22d, Washington. 23d, California and Oregon. 24th, California, Missouri, New Mexico, Oregon, and Washington. 25th, Massachusetts, Nevada, Ohio, and Washington. 26th, Indiana and Missouri. 27th, Missouri. 28th, Arkansas, Oregon, and Washington. 29th and 30th, Arkansas.

SLEET.

Description of the more severe sleetstorms is given under "Local storms." Sleet was reported as follows: 1st, Massachusetts and Utah. 2d, Maine, Massachusetts, and Vermont. 4th, Ohio and Wisconsin. 6th, Kentucky and North Dakota. 8th, Mississippi, New Jersey, and Texas. 9th, Arkansas, Kentucky, Maryland, Mississippi, New Jersey, Ohio, Pennsylvania, and Tennessee. 10th, Massachusetts, Ohio, Pennsylvania, and Virginia. 11th, Illinois, New York, Pennsylvania, and Wisconsin. 12th, Pennsylvania. 13th, Michigan. 14th, Michigan and Ohio. 16th, Missouri and Utah. 17th, Illinois, Iowa, Michigan, Mississippi, Missouri, and Wisconsin.

18th, Michigan, New York, Ohio, Pennsylvania, and Wisconsin. 19th, Maryland and Montana. 20th, Iowa. 21st, New York and Pennsylvania. 22d, Montana and South Dakota. 24th, Illinois, Iowa, Kansas, Missouri, Nebraska, Nevada, North Dakota, South Dakota, Utah, and West Virginia. 25th, Illinois, Indiana, Iowa, Kentucky, Michigan, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Tennessee, Virginia, and Wisconsin. 26th, Indiana, Kentucky, Michigan, Minnesota, Missouri, Ohio, Virginia, and Wisconsin. 27th, Illinois, Indiana, Iowa, Michigan, Missouri, Ohio, Virginia, and Wisconsin. 28th, Iowa, Kansas, and Pennsylvania. 29th, Iowa, Massachusetts, Ohio, Pennsylvania, and Washington. 30th, Iowa and North Dakota.

WINDS.

The prevailing winds for November, 1892, are shown on Chart II by arrows flying with the wind. In the middle Atlantic and New England states, the Ohio Valley and Tennessee, and the Missouri Valley the winds were generally from the northwest; in the south Atlantic states and the extreme northwest, from west to north; over the Florida Peninsula and the east Gulf states, from northwest to northeast; in the west Gulf states, from east to south; in the Lake region, on the northeast slope of the Rocky Mountains, and along the middle Pacific coast, from southwest to northwest; in

the upper Mississippi valley, over the middle plateau region, and on the north Pacific coast, from southeast to southwest; on the middle and southeast slopes of the Rocky Mountains, from south to west; along the south Pacific coast, from west to northwest; and over the southern plateau region, variable.

HIGH WINDS (in miles per hour).

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows: 4th, 50, ne., at Chicago, Ill. 5th, 52, nw., at Woods Holl,